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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,038	12/01/2000	Hung Chen	AMAT/3778/CMP/CMP/RKK	2584

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APPLIED MATERIALS, INC.
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EXAMINER	
GRANT, ALVIN J	

ART UNIT	PAPER NUMBER
3723	

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/728,038	CHEN ET AL.	
	Examiner	Art Unit	
	Alvin J. Grant	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 4, 5, 6, 8, 9, 11, 14, 15, 16, 18, 19, 20, 26, 27, and 32-37 are rejected under 35 U.S.C. 102(a) as being anticipated by Elliott et al. '540.

Elliott et al. discloses a semiconductor polishing device with one surface defining at least one nonintersecting fluid retaining groove, at least a portion of which is oriented at an angle relative to the radial line originating at its center, is adapted to flow a fluid inwardly toward a center portion of its surface, and is adapted to be used with a rotary polisher (see figure: 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott et al.

Referring to claim 3, Elliott et al. does not disclose a groove having varying slope. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the pad of Elliott et al. to change the depth of the grooves so as to increase or decrease the rate of flow, hence the quantity of the slurry.

Referring to claim 17, Elliott does not specifically disclose that the polishing pad is constructed of polyurethane. However, it wound have been obvious to one having ordinary skill in the art at the time the invention was made to have made the CMP pad of Elliott out of polyurethane, since it has been held to be

within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (In re Leshin, 125 USPQ 416), and since any known material which is capable of being used as a CMP polishing pad would be appropriate.

Claims 2, 12, 13, 23, 24, 28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott et al. in view of Beardsley et al. '515 B1.

Elliott et al. is described above. Elliott et al. does not disclose a platen containing non-intersecting fluid retaining grooves. Beardsley et al. discloses a CMP apparatus comprising a rotating platen that contains recesses that distribute the slurry, which provides for a uniformly planarized workpiece and also creates a system which also removes slurry for disposal or reuse (see figures 4 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the platen of the Elliott et al. apparatus to include grooves so as to distribute the slurry along prescribed paths assuring more even distribution of the slurry and creating a system for removing the slurry for reuse or disposal as taught by Beardsley et al.

Claims 7, 10, 21, 22, 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott et al. in view of Beardsley et al. and further in view of Okamura et al. '830 B1.

Elliott et al. as modified is described above. Elliott et al. does not disclose a polishing pad with linear grooves. Okamura et al discloses an apparatus for chemical mechanical polishing using polishing pads containing linear grooves (see figures 3 and 4) to provide for a more even distribution of pressure on the workpiece thus producing a better quality finish. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the platen of Elliott et al. to include linear grooves so as to allow for distribution of the slurry and the pressure transmitted to the workpiece as taught Okamura et al.

Response to Arguments

Applicant's arguments filed 8 July 2002 have been fully considered but they are not persuasive.

In response to Applicant's argument that the Elliott et al. reference does not disclose non-intersecting grooves as shown in figure 3, the Examiner disagrees. Elliott et al. discloses a polishing pad

with center 66 (see figure 3) from the non-intersecting grooves originate; and to and from which the flow of slurry is directed. Also configurations embodying non-intersecting grooves are well known in the art. The point of intersection of two streets means that each street extends beyond the intersection. In the case of Elliott, there are different grooves originating from the central portion.

In response to Applicant's argument that the definitive groove configuration limitations disclosed by Elliott et al. (in column 4, lines 20-31) does not contemplate varying a groove depth along its length, therefore a person skilled in the art would not be motivated by Elliott et al. to use a groove with varying depth, the Examiner disagrees. Elliott teaches (in lines 28-31 of column 4) that optimizing the specific configuration of the groove will depend upon experimental results of actual use of the polishing pad. Therefore, varying the depth of the groove to vary the rate of flow of the slurry would be obvious to one having ordinary skill in the art.

In response to applicant's argument that the rejection based on the Elliott et al. and Beardsley et al. combination is improper, the Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references, In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test of combining references is what the combination of disclosures taken, as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA 1969). In this case the Elliott et al. reference in combination with Beardsley et al. reference teaches the use of recesses for distributing slurry which provides for a uniformly planarized workpiece and creates a system for removing the slurry for reuse or disposal.

The Okamura et al. reference (U.S. Patent No. 6,332,830 B1) that was cited on the in the Form 892 and submitted with the Non-Final Rejection is correct. The number cited in the Detailed Action is incorrect.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alvin J. Grant whose telephone number is (571) 272-4484. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph J. Hail can be reached on (571) 272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alvin J Grant
Patent Examiner
Art Unit 3723

ajg

LEE D. WILSON
PRIMARY EXAMINER